

Purpose Determining the benign or malignant nature of a breast mass following autologous breast reconstruction can be difficult. We present our experience over the last 10 years to identify variables that aid in the differentiation of these lesions.

Methods A retrospective review of a consecutive series of autologous breast reconstructions was performed from January 2000 through December 2009. Patients presenting with a palpable or radiographically identified breast mass were identified. Primary tumor characteristics and stage, adjuvant treatments, timing of the development of the mass, radiologic correlation, and pathology were reviewed.

Results 366 flaps were performed on 278 patients (254 DIEP, 35 SIEA, 20 ms free TRAM, 25 latissimus, and 32 pedicled TRAM flaps) with a mean follow up of 34 months. Breast masses were identified in 66 breasts (18%). Fat necrosis was diagnosed in 54 breasts (15% overall; DIEP 13.4%, SIEA 5.7%, ms free TRAM 15%, lat 0%, pedicled TRAM 47%) and was first identified at a mean of 2.9 months. Recurrent carcinoma was diagnosed in 13 breasts (3.6%) and was first discovered at a significantly later time period following reconstruction (23.7 months). The development of recurrent carcinoma most frequently occurred when pathologic tumor margins were less than one centimeter at the time of extirpation. Radiologic imaging was utilized in 18 breasts in patients with fat necrosis (18/54, 33%) to study the etiology of the mass. 16 suggested a benign process, whereas 2 were suspicious for carcinoma, both of whom were later found to have a tumor recurrence. Imaging was utilized in 10 of 13 cases in patients with recurrent carcinoma, 9 of which suggested recurrence, whereas one was indeterminate.

Conclusions Breast masses frequently present following autologous breast reconstruction. Fat necrosis is the most common etiology and presents at a significantly earlier time period following reconstruction, most often in the immediate postoperative period, and is fairly easy to diagnose radiographically. Recurrent carcinoma can occur in the reconstructed breast and tends to present at a later time period. Recurrent carcinoma more often occurs if tumor margins are close (less than one centimeter) or if the original tumor presented at a more advanced stage. Radiographic imaging facilitates the diagnosis of recurrence and a low index of suspicion for recurrence should accompany those with higher risk characteristics